In Southeast Alaska, Kake turns to solar power for energy

Stephanie Shor | Juneau Empire | January 4, 2015

JUNEAU, Alaska -- Isolated in the rainforest of Southeast Alaska, residents in Kake are thinking of alternative energy. In that, they're not unlike the inhabitants of any other rural Alaska community. What makes Kake special is the way it's approaching the topic.

After exploring wind energy options in partnership with the Southeast Alaska Conservation Council in 2010, the Organized Village of Kake and five other Alaska Native communities received a U.S. Department of Energy grant for a different approach: solar power.

Kake installed 24 solar panels on its tribal government building in 2012.

Elk Hunter stands Friday, Dec. 26, 2014, in front of his home in Kake, Alaska, where he installed 16 solar panels on his roof almost two years ago.

Stephanie Shor / Juneau Empire

"A consultant joked that solar power in a rainforest would be a real trick," Gary Williams, the executive director of the Organized Village of Kake said. "But it works because of our microclimate here."

Solar power requires less maintenance and infrastructure than windmills, and in the two years since the panels were installed, they've been more efficient in Kake than projections for wind power.

Kake residents have always prided themselves on maintaining energy consciousness. They have to, with fuel prices up to $5.29 a gallon, plus a 5 percent city sales tax, at the only gas station in town. The village has faced many bouts of fuel rationing and has even run out of gas for brief periods when the fuel barge was delayed by bad weather.

On the Sunday before Christmas, the first hybrid-electric car for the tribally owned Keex' Kwaan Lodge arrived on a scheduled ferry. Although the lodge is located just a few minutes from the rural airport, and the town boasts few

paved roads, Kake's 640 or so residents want to kick their fossil fuel habit.

"Well, it's good for the environment, that's No. 1, and No. 2, it saves money," Williams said of the new hybrid Prius and 2-year old solar panels, which are expected to last at least 20 years.

The purpose of the Department of Energy's demonstration solar project was to spur other individuals and communities to try it out.

"I think it's going to be a good way to go to inspire others to go this way. We have been recognized as somewhat of a trendsetter," Williams said.

Adam Davis, community and economic development specialist for the Organized Village of Kake, said the system on the government building has produced 11,985 kilowatts so far, with an estimated fuel savings of $7,550. Davis has not installed solar panels on his own home yet, but he plans to set up a miniature hydroelectric power plant at the creek by his house.

Davis is also a member of the village school board and hopes to educate children on energy efficiency. He said the school had an $110,000 surplus in its budget last year, and he has plans to propose switching the school to LED lights. This would reduce the building's electricity usage by 60 percent, and the savings would pay for another full-time teaching position.

Many villagers are hesitant to install their own solar panels because of the initial cost: They can't afford the installation while they're coping with pricey energy bills due to old electricity-sucking appliances and light bulbs, Davis said.

At least one Kake resident has climbed on the solar bandwagon. Elk Hunter installed two arrays of eight solar panels on his roof in May 2013. The entire setup cost $4,700.

In just the last year and a half, Hunter's 16 panels have generated $3,328 worth of energy -- enough, along with the 30 percent tax credit he received -- to pay for the cost of the system.

The solar system has its drawbacks, too.

"With this system here, I can produce as much energy as I can use in a year. But I produce most of it in the summer and I can't store it for winter and evenings, when I really need it," Hunter said.

The solar panels at Hunter's house and the government building are tied to the local power grid, and on sunny days when the panels produce more energy than they use, the excess is pushed back into that grid.

"They are turning around and selling the energy I produce to other people," Hunter said.

Federal regulations require larger communities with solar panels to use "net metering," which reverses a home's electric meter when it produces excess energy. This way, households are given credit for energy that they can use on cloudier days. Kake is not large enough to meet this requirement, and so its excess solar energy goes to IPEC,

resulting in lower fuel costs for the company.

Hunter is considering ways to circumvent this loss and use more of the energy he can't store for later.

Solar panels come in different varieties for efficiency. Basic photovoltaic panels are stationary and typically made of silicon, which is one of the most abundant chemical elements on the planet. More advanced installations are equipped with mechanical devices that track the sun across the sky so that the panel is always facing direct sunlight. This maximizes efficiency, especially in the evenings, when the sun would otherwise be on the back side of the panel.

Trackers are often expensive, at around $7,000 just for the equipment, and they can be unreliable. Trackers that use electric "eyes" to watch the sun can be confused by cloud.

Hunter said if he doesn't get a tracker, he likely will cover the other side of his roof with two of his panels so that some will face the sun in the morning, and some in the evening, which lasts until nearly 10 p.m. during the summer.

"I can take two panels out and still produce to the max. I want to see for myself what's a viable alternative for people who live here," Hunter said as neighborhood dogs roamed the street outside his single-family home in the Phase 2 Kake housing complex.

The tribal government building is the converted mess hall of the historic Keku Cannery and functions as one of two government entities in town. Almost 20 employees use large amounts of energy during daylight hours to offer essential services for residents.

The cannery itself was named one of the 11 most endangered historical sites in the country by the National Trust for Historic Preservation. The decaying cannery, which closed after nearly 80 years in 1980, is symbolic of the town's economic rise and decline.

Before 2004, Kake had between 800 and 900 people. In that year, the logging industry declined and the village cold storage plant stayed closed. Many people were forced to leave. Only recently, the village has managed to rebound, but there have been setbacks. The town's only restaurant was recently forced to close due to lack of business, and the local fish hatchery also shut down.

Davis and Williams said they are focused on rejuvenating Kake after hard years of struggle and decline. A recently completed project to remove some of the town's dilapidated buildings started when students suggested it. The tribal government intends to move forward with community improvements including more attempts at hydroelectric power and renovating the cannery.

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Comment

Elk Hunter · BYU - ID

The less fossil fuel that lights my house the more I have to run the boat. Yay!

Reply · Like · 4 · January 5 at 11:09pm

Elk Hunter · BYU - ID

Dear Dennis,
You just don't get it. It is not how much energy was I able to use immediately. With net metering I can retrieve that energy at any time. From the grid. The key to solar production in a community like Kake that produces the electricity with Diesel fuel. The more solar we produce in the summer reduces the total consumption of fossil fuels used during the year and the cost of fossil fuel is an upward trend. I purchased my system with out the use a a grant because it made good economic sense for my personal use. I am not sorry for one dime I have spent. I also know how each home owner in Kake can reduce their purchase of fossil fuel generated power with only a small investment on their part and without the need for a grant. It may not work for you but it works for me. Why put down what is working just because it won't work for you.
Anyone who would like help to check out the feasibility of solar for use in their circumstances in welcome to contact me. I am in the phone book under Elk Hunter Kake Alaska. Or if you prefer send me a letter by snail mail. Alan Hunter PO Box 195 Kake, AK 99830. This is a free offer I will help anyone with a real desire as long as time permits.
Well Jeff did this answer the question? Or did the TOP DOG Commentator Mr Doland make more sense?

Reply · Like · 3 · Edited · January 5 at 11:05pm

Dennis Doland · Top Commenter

Actually, I think I do get it, Mr Elk Hunter. And, to set the record straight, I'm all for renewable energy -- wherever it's feasible. The problem we run into in Alaska is that pesky thing called supply and demand.

What are the biggest consumers of energy in the typical Alaska home? Heating and hot water, most definitely. When supply (sunshine) is high, demand for energy (i.e. home heating) is low. Oh, but there's all that free sunshine (when it's not raining or cloudy), so let's "harvest" it! Sure, we can use it to run the cannery, charge our hybrids and iPhones, etc, but the one thing we CAN'T do is save that energy for when we REALLY need it: in winter when energy consumption spikes.

Net metering in rural Alaska would make no financial sense for the local utility because they'd be buying your extra electricity when t... See More

Reply · Like · January 6 at 12:22am

John Coller · The University of Nottingham

I find it fascinating to read stories of how solar is working, unsubsidized around the world in India, China, Africa and Australia; but I didn't expect to add Alaska to the list.

It sounds like you have made a shrewd investment that will benefit directly both you and your local community.

To quote the popular internet meme, "Haters gonna hate", but none of the arguments mentioned hold any weight. Global warming is not relevant to this article, Canada already gets 21% of electricity from hydro to cover all the rainy days and there are devices like solar immersion switches for

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